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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,372	10/22/2003	Chandra Sekhar Namuduri	GP-303269	4956

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EXAMINER

WILLIAMS, THOMAS J

ART UNIT PAPER NUMBER

3683

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/691,372

Applicant(s)

NAMUDURI ET AL.

Examiner

Thomas J. Williams

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NW

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 and 27 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10,12-22,24 and 25 is/are rejected.
- 7) ☒ Claim(s) 3,11 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. Acknowledgment is made in the receipt of the amendment filed July 12, 2004.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,390,253 to Oliver.

Re-claims 1, 2, 4 and 6, Oliver discloses in figure 2B an impact energy absorbing system comprising: a sleeve 58 having a seal at each end, a magnetorheological fluid, a coil 74; a primary impact surface fixed to a support member 64 and 66, the support member is in sliding engagement with the seals, wherein the magnetorheological fluid essentially does not flow to effect the sliding engagement (as known in the art the viscosity of the MR fluid is altered to either increase or decrease the fluid viscosity depending upon the situation at hand, an increase in viscosity will result in fluid having essentially little flow); the sleeve is fixed to a vehicle chassis; the support is formed of a soft magnetic material (column 7 lines 37-39); the fluid comprises ferromagnetic particles (such as iron powder, column 6 lines 2-4) in a carrier fluid.

4. Claims 9, 10, 12 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,947,238 to Jolly et al.

Re-claims 9, 10, 12 and 14-16, Jolly et al. discloses in figure 12a an impact energy absorbing system comprising: a sleeve having a seal at each end, a magnetorheological fluid, a

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permanent magnet 32; an impact surface fixed to a support member 27n, the support member is in sliding engagement with the seals, wherein the magnetorheological fluid essentially does not flow to effect the sliding engagement (as known in the art the viscosity of the MR fluid is altered to either increase or decrease the fluid viscosity depending upon the situation at hand, an increase in viscosity will result in fluid having essentially little flow); the sleeve is fixed to a vehicle chassis; the support (including the piston) is formed of a soft magnetic material (column 5 lines 25-27); the fluid comprises ferromagnetic particles in a carrier fluid (column 4 lines 48-55); the particles are in an amount of about 5 to 75 percent by volume of the fluid.

5. Claims 1, 2, 4, 6, 8-10, 12, 14, 16-19, 21, 22 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,427,813 to Carlson.

Re-claims 1, 2, 4 and 6, Carlson discloses an impact energy absorbing system comprising: a sleeve 22 having a seal at each end, a magnetorheological fluid, a coil 40; a primary impact surface fixed to a support member 24 and 42, the support member is in sliding engagement with the seals, wherein the magnetorheological fluid essentially does not flow to effect the sliding engagement (as known in the art the viscosity of the MR fluid is altered to either increase or decrease the fluid viscosity depending upon the situation at hand, an increase in viscosity will result in fluid having essentially little flow, see column 4 lines 23-27); the sleeve is capable of being fixed to a vehicle chassis; the support is formed of a soft magnetic material (column 4 lines 27-29); the fluid comprises ferromagnetic particles (such as carbonyl iron, column 1 line 21) in a carrier fluid; the system includes a permanent magnet 25.

Re-claims 9, 10, 12, 14, 16 and 17, Carlson discloses an impact energy absorbing system comprising: a sleeve 22 having a seal at each end, a magnetorheological fluid, a permanent

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magnet 25; an impact surface fixed to a support member 24 and 42, the support member is in sliding engagement with the seals, wherein the magnetorheological fluid essentially does not flow to effect the sliding engagement (as known in the art the viscosity of the MR fluid is altered to either increase or decrease the fluid viscosity depending upon the situation at hand, an increase in viscosity will result in fluid having essentially little flow, column 4 lines 23-27); the sleeve is capable of being fixed to a vehicle chassis; the support is formed of a soft magnetic material; the fluid comprises ferromagnetic particles in a carrier fluid; the system comprises an electromagnet 40.

Re-claims 18, 19, 21 and 22, Carlson discloses a process for absorbing energy from an impact of an object on an impact surface, the process comprising: detecting an impact with a sensor, sensors are mounted on an impact surface and a chassis (or stationary body), the impact surface is attached to a support member 24; the magnetic field can be varied in response to a signal provided by the sensor, energy from an impact is absorbed; the system can be used multiple times, wherein the magnetorheological fluid essentially does not flow to effect the sliding engagement (as known in the art the viscosity of the MR fluid is altered to either increase or decrease the fluid viscosity depending upon the situation at hand, an increase in viscosity will result in fluid having essentially little flow).

6. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by US 5,492,312 to Carlson.

Re-claim 24, Carlson discloses in figure 1 an impact energy absorbing device, comprising: a primary impact surface attached to a shaft 34, the shaft (or support member) is slidably engaged with a housing 26; a plurality of plates 38 and 42 are parallel to each other; a

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magnetorheological fluid is disposed between the plates; an electromagnet or permanent magnet (column 5 lines 41-42) is in proximity to the fluid.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 5, 7, 13, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,427,813 to Carlson in view of US 5,525,249 to Kordonsky et al.

Re-claims 5, 7, 13, 15 and 20, Carlson teaches a magnetorheological fluid comprising carbonyl iron. However, Carlson is silent regarding the volume percent of the iron and the contents of the liquid carrier. Kordonsky et al. teaches a magnetorheological fluid comprising carbonyl iron within a 5 to 75 percent volume of the fluid and the use of silicone dioxide as a stabilizer. Kordonsky et al. teaches that this combination provides for a stable magnetorheological fluid, see column 1 lines 65-66. It would have been obvious to one of

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ordinary skill in the art as a matter of design choice to have utilized the fluid taught by Kordonsky et al. in the device of Carlson, thus providing the impact energy absorbing system with a stable magnetorheological fluid.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson ('312) in view of Kordonsky et al.

Carlson teaches a magnetorheological fluid comprising carbonyl iron. However, Carlson is silent regarding the remaining contents of the liquid carrier. Kordonsky et al. teaches a magnetorheological fluid silicone dioxide as a stabilizer, thus providing a stable magnetorheological fluid, see column 1 lines 65-66. It would have been obvious to one of ordinary skill in the art as a matter of design choice to have utilized the fluid taught by Kordonsky et al. in the device of Carlson, thus providing the impact energy absorbing system with a stable magnetorheological fluid.

***Allowable Subject Matter***

11. Claims 3, 11 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 26 and 27 are allowed.

***Response to Arguments***

13. Applicant's arguments filed July 12, 2004 have been fully considered but they are not persuasive. As stated in the above rejection the degree of flow for an MR fluid will depend upon the field strength of the coil adjacent the fluid. Changes in viscosity are easily obtained, by increasing viscosity one will reduce the flow of the fluid. This point is disclosed by Carlson, and

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is inherent in all MR dampers. Regarding claim 24, elements 42 in Carlson are interpreted as plates. The plates are alternately attached to the support member and the framing member. It is unclear to the examiner what the applicant intends to define as a "plate". The particular shape of the plates is not addressed in the instant claim or the specification. Regarding claims 5, 7, 13, 15 and 20, the prior art of Kordonsky et al. provides the motivation for combining the references. It is believed the rejection is proper. It is unclear to the examiner why the applicant is putting forth arguments regarding a lack of *prima facie* case of obviousness for claims 1, 9 and 18. Claims 1, 9, and 18 are rejected under 35 U.S.C. 102, not 35 U.S.C. 103.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is (703) 305-1346.

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The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder, can be reached at (703) 308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

TJW

September 15, 2004

THOMAS WILLIAMS  
PATENT EXAMINER

*Thomas Williams*

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9-16-04